REMARKS

The present application was filed on September 1, 2000 with 20 claims. In the originally filed claims, there was a second instance of claim 13, and the Examiner renumbered the second instance of claim 13 and claims 14 through 19 as claims 14 through 20. Consequently, claims 1 through 20 are presently pending in the above-identified patent application. Claims 1, 3-5, 7, 9, 17, 19, and 20 are proposed to be amended herein.

In the Office Action, the Examiner objected to the numbering of the claims and objected to the application because a reference to a U.S. Patent Application did not include a specific application number. The Examiner objected to the drawings, but indicated that the drawings filed on September 1, 2000 are acceptable subject to correction of indicated informalities. The Examiner also provisionally rejected claims 1-20 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 09/653,888. The Examiner rejected claims 1-4, 8-11, 13-17, and 19-20 under 35 U.S.C. §103(a) as being unpatentable over Papierniak et al. (United States Patent Number 6,175,838, hereinafter "Papierniak") in view of Yaginuma et al. (United States Patent Number 6,477,538, hereinafter "Yaginuma") and rejected claims 5-7, 12, and 18 under 35 U.S.C. §103(a) as being unpatentable over Papierniak et al. and Yaginuma et al, and further in view of Hunt et al. (United States Patent Number 6,223,215, hereinafter, "Hunt").

The present invention is directed to a computer system and method that provides one or more visualizations to one or more users of a network application. The computer executes a sessionization process that receives one or more Web server logs from one or more online stores, and generates one session table for each session found from requests recorded in Web server logs. A shopping step finder process then receives one or more session tables and generates one micro-conversion table for each given session table. Finally, a visualization process receives one or more of the micro-conversion tables and generates one or more micro-conversion visualizations of one or more micro-conversions.

Amendments to Claims

Applicants have amended claims 1, 3-5, 7, 9, 17, 19, and 20. Independent claims 1, 19 and 20 have been amended to add limitations of "each micro-conversion table comprising one or more shopping steps" and generating visualizations of "shopping steps from one or more of the micro-conversion tables." These limitations are supported, *inter alia*, by originally filed claim 5, Figures 6, 6A, and 8, and associated text. Claim 5 has been amended to remove a limitation that is now added to the independent claims. Claims 3, 4 and 7 have been amended to clarify that "ID" refers to an "identification." Claims 9 and 17 have been amended to remove parenthetical statements.

Drawings

The Examiner objected to the drawings, but indicated that the drawings filed on September 1, 2000 are acceptable subject to correction of indicated informalities. Applicants have enclosed formal drawings to correct the indicated informalities. Applicants respectfully request the objection to the drawings be withdrawn.

Formal Objections

The application was objected to because the reference to a U.S. Patent Application did not include a specific application number. The specification has been amended to include the number of the referenced application and Applicants respectfully request that the objection to the application be withdrawn.

The numbering of the claims was also objected to because claims 14 through 20 were misnumbered as claims 13-19. In accordance with the Examiner's directive, it is assumed that original claim 13 (second occurrence) through 19 have been renumbered as claims 14 through 20, and Applicants will refer to this nomenclature for this response and all additional correspondence. Applicants respectfully request that the Examiner's objection to the numbering of the claims be withdrawn.

Double Patenting

Claims 1-20 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 09/653,888. The Examiner asserts that, although the conflicting claims are not identical, they are not patentably distinct from each other because both applications address on-line shopping, use of server logs and micro-

visualization techniques comprising a parallel coordinate system and one or more extension components.

Applicants respectfully assert that the Double Patenting rejection is improper and request that the rejection be withdrawn. The only independent claim of co-pending Application No. 09/653,888 is a method claim requiring "providing the user with a means to...view one or more variations of the one or more clickstream data visualizations upon the user's request; and providing the user with a means to store one or more generated clickstream data visualizations in one or more computer memories." The claims of the present application do not include these limitations, and these limitations are not obvious over the limitations in the claims of the present invention. Moreover, both applications were filed on the same day, so they should both expire on the same day.

Independent Claims 1, 19 and 20

Independent claims 1, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Papierniak in view of Yaginuma. In particular, while the Examiner acknowledges that Papiernak does not teach a "shopping step finder process that receives one or more session tables, and generates one micro-conversion table for each given session table; and a visualization process that receives one or more micro-conversion tables, and generates one or more micro-conversion visualizations of one or more micro-conversions," the Examiner asserts that Yaginuma discloses these limitations.

Applicants note that Yaginuma is directed to a "data display apparatus and method for displaying the result of a data mining process as multi-dimensional data." See Abstract of Yaginuma. As illustrated in the examples (e.g., see Figures 5-7, 10, 12, 15, 18, 24-25, 27, 29, 32-35, 37, 40A/B, 42, 44, and 51 of Yaginuma), Yaginuma teaches the data mining of static characteristics associated with an independent variable. For instance, Figure 6 illustrates the visualization of a number of *static characteristics*, e.g., fuel consumption, horsepower and weight, for a number of different vehicles.

By contrast, the present invention may be used to visualize the *steps in a shopping process*, as illustrated in Figures 8 and 9 and claimed in amended independent claims 1, 19 and 20. Specifically, each of the amended independent claims 1, 19 and 20

have been amended to contain the limitations of "each micro-conversion table comprising one or more shopping steps" and generating visualizations of "shopping steps from one or more of the micro-conversion tables."

Yaginuma does not address the issue of finding or visualizing "steps" in a shopping process to generate micro-conversion tables having shopping steps, and does not address visualizing shopping steps from the micro-conversion tables, as claimed in amended independent claims 1, 19 and 20.

Thus, Papiernak and Yaginuma, alone or in combination, do not disclose a "shopping step finder process that receives one or more session tables, and generates one micro-conversion table for each given session table, each micro-conversion table comprising one or more shopping steps; and a visualization process that receives one or more micro-conversion tables, and generates one or more micro-conversion visualizations shopping steps from one or more of the micro-conversion tables," as required by amended independent claim 1, with similar limitations in amended independent claims 19 and 20.

Additional Cited References

Hunt was also cited by the Examiner for its disclosure of a system where the micro-conversion table comprises shopping steps in an online store and product entries for each shopping step.

Applicants note that Hunt is directed to a method for *interactive network session tracking*. Hunt tracks a session "on the fly" with a method dedicated to one session at a time and does not utilize server logs to generate session tables nor utilize said server logs in a shopping step finder process. Independent claims 1, 19 and 20, as amended, require a shopping step finder process that receives one or more session tables, and generates one micro-conversion table for each given session table, where each micro-conversion table comprises one or more shopping steps. Hunt does not disclose a table having shopping steps.

Thus, Hunt does not disclose or suggest the unique limitations as required by independent claims 1, 19, and 20, as amended.

Dependent Claims 2-17

Dependent claims 2-4, 8-11, and 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Papierniak in view of Yaginuma and claims 5-7, 12, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Papierniak and Yaginuma, and further in view of Hunt.

Claims 2-18 are dependent on claim 1 and are therefore patentably distinguished over Papierniak, Yaginuma, and Hunt (alone or in any combination) because of their dependency from independent claim 1 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims, i.e., claims 1-20, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

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VERSION MARKED TO SHOW CHANGES

IN THE SPECIFICATION

The paragraph beginning at page 12, line 5, has been modified as follows:

Next (207), by examining the generated visualizations of shoppers' activities (800) in the online store (103), business analysts understand the effectiveness of their store and/or identify one or more problems with their store such as a broken link to promoted products, or a lengthy and cumbersome checkout process. Business analysts make recommendations for store improvement based on their findings.

The paragraph beginning at page 12, line 21, has been modified as follows:

See U.S. Patent Application number 09/653,888, entitled BUSINESS METHOD FOR VISUALLY ANALYZING CLICKSTREAM DATA WITH A PARALLEL COORDINATE SYSTEM, filed on the same day as this application, to Juhnyoung Lee et al., which is herein incorporated by reference in its entirety.

IN THE CLAIMS:

1. (Amended) A computer system for providing one or more visualizations to one or more users, the system comprising:

one or more central processing units [(CPUs)], one or more memories, and one or more network interfaces to one or more networks;

a sessionization process that receives one or more Web server logs from one or more online stores, and generates one session table for each session found from requests recorded in Web server logs;

a shopping step finder process that receives one or more session tables, and generates one micro-conversion table for each given session table, each micro-conversion table comprising one or more shopping steps; and

a visualization process that receives one or more micro-conversion tables, and generates one or more micro-conversion visualizations of [one or more micro-conversions] shopping steps from one or more of the micro-conversion tables.

2. (Unamended) A system, as in claim 1, where the Web server log includes one or more Web page request records.

3. (Amended) A system, as in claim 2, where the Web page request record comprises a timestamp that is the system-generated time when the request is made, a user identification [ID] that is a unique number identifying the user who made the request, a session identification [ID] that is a unique number identifying the session which made the request, a referrer that is the Web page the session sees immediately before making this request, a current page that is the Web page requested, and a group of hyperlinks that is contained in the current page.

4. (Amended) A system, as in claim 1, where the session table includes one or more Web page request records with all the session identification [ID] values in a session table being the same.

5. (Amended) A system, as in claim 1, where [the] each micro-conversion table further comprises [shopping steps in an online store and] product entries for each shopping step.

6. (Unamended) A system, as in claim 5, where the shopping steps include a product impression that is the view of hyperlink to a Web page presenting a product and/or a service, a clickthrough that is the click on the hyperlink and view of the Web page of the product and/or service, a basket placement that is the placement of the item in the shopping basket, and a purchase that is the purchase of the item and the completion of the transaction.

7. (Amended) A system, as in claim 5, where the product or service entry comprises a product or service identification [ID] that is a unique number identifying the product or service, and a timestamp when the corresponding shopping activity happens.

8. (Unamended) A system, as in claim 1, where the micro-conversion visualization comprises a traditional parallel coordinate system and one or more extension components.

9. (Amended) A system, as in claim 8, where the traditional parallel coordinate system is a parallel coordinate system comprising a series of parallel lines that are placed equidistantly, each parallel line being assigned a specific dependent variable and dependent variable values being plotted along the respective axis, and an independent variable that is represented by polygonal lines connecting the corresponding dependent variable values [(also referred to as data points)] and illustrating a relationship between an independent variable and the dependent variables appearing on each axis.

10. (Unamended) A system, as in claim 8, where the extension components include one or more parallel axes of sequential events, one or more dependent variable values of timestamps, one or more dropouts of polygonal lines, one or more filters, one or more categorizers,, and one or more hyperlink association.

11. (Unamended) A system, as in claim 10, where the parallel axes of sequential events is an assignment of a series of sequential events to parallel lines in a parallel coordinate system.

12. (Unamended) A system, as in claim 11, where the sequential events include one or more steps of shopping in one or more stores, and one or more product or service development steps.

13. (Unamended) A system, as in claims 10, where the dependent variable values of timestamps is an assignment of timestamp values as data points to a series of

sequential events that are assigned to the equal number of parallel axes in a parallel coordinate system.

14. (Unamended) A system, as in claims 10, where the dropout of a polygonal line is disappearance of a polygonal line before the line reaches the last parallel axis in a parallel coordinate system with the parallel axes of sequential events.

15. (Unamended) A system, as in claim 10, where the filter is a means to select and/or de-select one or more groups of polygonal lines viewed in a parallel coordinate system.

16. (Unamended) A system, as in claim 10, where the categorizer is a parallel axis in a parallel coordinate system whose purpose is to categorize polygonal lines in the system.

17. (Amended) A system, as in claim 15, where the categorizer includes one or more of the following: the referrer Web sites of sessions, the [ISPs (Internet] Internet Service [Providers)] Providers of sessions, the lengths of sessions, the methods used to find product or service information by sessions, the geographic regions where sessions come from, the ages, sex, education levels, and income levels of the owners of sessions, the sales history of the owners of sessions, the Web page patterns accessed by sessions or by the owners of sessions, either or not ordered by session, or by time.

18. (Unamended) A system, as in claim 10, where the hyperlink association is the association of one or more hyperlinks with the polygonal line representing a session, clicking on the polygonal line opens a Web page delivering detail information of the session.

19. (Amended) A method for visually analyzing clickstream data comprising the steps of:

receiving one or more Web server logs from one or more online stores' Web server systems;

generating one or more session tables from the [given] one or more Web server [log(s)] logs;

generating one or more micro-conversion tables from the generated one or more session [table(s)] tables, each micro-conversion table comprising one or more shopping steps;

generating one or more micro-conversion visualizations [from the generated micro-conversion tables] of shopping steps from one or more of the micro-conversion tables; and

interactively generating one or more variations of the generated micro-conversion visualizations upon interactive requests from one or more users.

20. (Amended) A computer system for visually analyzing clickstream data comprising:

means for receiving one or more Web server logs from one or more online stores' Web server systems;

means for generating one or more session tables from the [given] one or more Web server [log(s)] logs;

means for generating one or more micro-conversion tables from the one or more generated session [table(s)] tables, each micro-conversion table comprising one or more shopping steps;

means for generating one or more micro-conversion visualizations [from the generated micro-conversion tables] of shopping steps from one or more of the generated micro-conversion tables; and

means for interactively generating one or more variations of the generated micro-conversion visualizations upon interactive requests from one or more users.